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Date:	October 7, 2002	**Pages:**	14
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In re application of

Rickard M. VON WÜRTEMBERG et al

Serial No. 09/438,955

Filed: November 12, 1999

Group Art Unit: 2828

Examiner: Cornelius Jackson

For: BOTTOM EMITTING VCSEL (VERTICAL CAVITY SURFACE EMITTING LASER) WITH MONITOR EMULSION THROUGH TOP MIRROR

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#18/C Appeal 10/11/02

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Rickard M. VON WURTEMBERG et al.

Application No. 09/438,955

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AMENDMENT

GAU 2828
Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action mailed July 5, 2002, please amend the application as follows:

IN THE SPECIFICATION:

Page 1, please amend the title to read "VCSEL WITH MONITOR EMISSION THROUGH HIGH REFLECTIVITY MIRROR"

Page 2, please replace the paragraph beginning at line 31 with the following new paragraph:

-- In Figure 2, a standard VCSEL is illustrated having an ohmic contact 20, a substrate 22 and a stack consisting of reflective mirrors, the high reflectivity mirror being denoted by the

reference numeral 24 and the low reflectivity mirror being denoted by the reference numeral 26. Between the reflective mirrors is a light amplifying region 25.--

Page 3, please replace the paragraph commencing at line 1 with the following new paragraph:

-- As is known with VCSELs, one of the mirrors reflects less (and transmits more) of the incident light from the amplifying region 25. The light transmitted through this less reflecting mirror is the light constituting the output light emitted by the VCSEL. This light is shown in Figure 1 by the arrow indicated by numeral 28.

In the standard top-emitting VCSEL illustrated in Figure 22, light denoted by arrow 30 is lost as it is emitted into the substrate 22 below the bottom (high reflectivity) mirror 24 if it is not of a wavelength to which the substrate is transparent.

However, in a bottom emitting VCSEL, shown in Figure 3, where the light emitted through the less reflecting mirror 26 passes through a hole 32' forming a light output port in the substrate 22, nothing stops the light 28 that is transmitted through the high reflectivity mirror 24, except the ohmic contact 34 that is placed on the other side of that mirror. By providing an aperture 32 in the ohmic contact 34, it is possible to extract that light and monitor it with a photodiode (not shown) on which the VCSEL chip 14 can be placed. --

IN THE CLAIMS:

Please cancel claims 1-17 without prejudice or disclaimer, and add new claims 18-29 as follows:

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